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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/674,566

09/30/2003

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01/17/2007

EXAMINER

STEELMAN, MARY J

ART UNIT

PAPER NUMBER

2191

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/674,566

Applicant(s)

REIMER ET AL.

Examiner

Mary J. Steelman

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/30/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-29 are pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 16 recites "a program product in a signal bearing medium..." The Specification (page 14, lines 1-14) defines this to include transmission type media such as...wireless communications links using transmission forms such as, for example, radio frequency and light wave transmissions..." Such embodiments are non-statutory. Claim may be amended to recite, "A program product embodied in a recordable medium..."

Information Disclosure Statement

3. IDS received 09/03/2003 has been considered.

Specification

4. The use of the trademark JAVA has been noted in this application (Specification, page 7, line 15). It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 recites the limitation "said product" on page 19, line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-29 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent

Application Publication 2003/0037316 A1 to Kodosky et al.

Per claim 1:

A method for providing a hierarchical representation of a program, said method operable at least in part within an information processing system, comprising:

Art Unit: 2191

[0014]-The program icons may be displayed with connections to visually indicate their relationship (hierarchical representation of a program)

- a. determining an object containment hierarchy (OCH) for a first portion of the program;
- b. annotating the OCH with a temporal flow hierarchy (TFH) from the program to form an annotated OCH for the program;
- c. displaying at least a portion of the annotated OCH in response to a user selection.

[0017]-The configuration diagram may support various types of views...program view. For example, the user can 'drill down' in the configuration diagram to view a selected portion of the diagram [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information). [0107-0108]-interconnected nodes visually indicate (display) the functionality of the program, connected in one or more of a data flow, control flow (temporal flow hierarchy/TCH), and / or execution flow format. [0446]-annotate

Note: Figures 6 (configuration diagram), 7 (configuration diagram), 8 (program icons displayed), 15, 16, 17, 18, 19A, 19B, 19C, 20A (scroll), and 20B.

Art Unit: 2191

Per claim 2:

-wherein steps a and b are performed by a program analysis tool based on structural and functional data of the program.

[0009]-debugging and performance analysis (program analysis tool) [0009]-structural data of the program [0013]-functional data of the program

Per claim 3:

-prior to step c, displaying a portion of the OCH in response to a selection of a coding pattern, wherein said tool is a debugger and said user selection is a selection of an object in said first portion of the program related to said OCH.

[0026], [0041], [0286], [0446] debugger tool, user input selects device icon and / or select a respective program icon associated with the device and view the block diagram of the graphical program [0014]-object-oriented view

Per claim 4:

-wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy,

[0014]-The iconic relationship view may comprise an object oriented view, a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view, or combinations thereof.

Art Unit: 2191

-and step b comprises adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

[0014]-visually indicate their relationship, such as their invocation (e.g. caller/callee) relationship (temporal flow information / invocation hierarchy) [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view, a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view, or combinations thereof (adding temporal flow information).

Per claim 5:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first group.

[0281]-configuration diagram displayed with an iconic relationship view [0286]-text representation

Per claim 6:

-wherein step c comprises opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the

Art Unit: 2191

program in a second window.

As an example, see FIG 20A. [0284-0286]-source code of the program to be displayed

Per claim 7:

-wherein said tool is one of a group of profiler, debugger, and quality analyzer, and step a further comprises determining the TFH for the first portion of the program.

[0446-0448]-debugging, [0456]-analyzer, [0475]-quality of measurement information

Per claim 8:

An information handling system comprising a processor and a program analysis tool, the program analysis tool comprising plural instructions and said processor being operably configured to execute said plural instructions, wherein said plural instructions comprise:

-first instructions for determining a program hierarchy for a program based on an output of said tool, wherein the program hierarchy comprises a combination of an object containment hierarchy (OCH) and a temporal flow hierarchy (TFH) of the program;

[0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information).

Art Unit: 2191

-and presentation instructions for presenting at least a portion of the program hierarchy in response to a user input.

[0014]-The program icons may be displayed with connections to visually indicate their relationship (hierarchical representation of a program)

Per claim 9:

-wherein the first instructions comprise second instructions for determining the OCH for a first portion of the program and further instructions for annotating the OCH with information from the TFH to form an annotated OCH for presenting as said portion of the program hierarchy.

[0017]-The configuration diagram may support various types of views...program view. For example, the user can 'drill down' in the configuration diagram to view a selected portion of the diagram[0107-0108]-interconnected nodes visually indicate (display) the functionality of the program, connected in one or more of a data flow, control flow (temporal flow hierarchy/TFH), and / or execution flow format. [0018]-detect the relationship (e.g. invocation relationship) (object reference hierarchy) among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information). [0446]-annotate

Art Unit: 2191

Per claim 10:

-wherein said tool is a program understanding tool operable for performing the first instructions based on operational data of the program.

[0159]-configuration diagram may be automatically or programmatically created by the computer system, based on an automatic detection (program understanding tool) of devices...

[0161]-the connection that is displayed or created on the display may have a context or appearance that is associated with the data type of the data, or type of material, being transmitted between the devices.

Per claim 11:

-wherein said program understanding tool is one of a group of profiler, debugger, and quality analyzer, and the second instructions are further operable for determining the TFH for the first portion of the program.

[0446-0448], [0456], [0475] – debugger/ analyzer [0018]-detect the relationship among programs resident in the various devices...and automatically display connections...to visually indicate the determined relationship (hierarchy) The iconic relationship view may comprise an object oriented view (object containment hierarchy/OCH), a hierarchy view (object reference hierarchy), a tree view, a data flow view (data dependence), an execution flow view, a control flow view (temporal flow hierarchy/TFH), or combinations thereof (adding temporal flow information).

Art Unit: 2191

Per claim 12:

-wherein said program understanding tool is a debugger, the system further comprising instructions for displaying a portion of the OCH in response to a selection of a bug, and the presentation instructions being operably responsive to said user input wherein the user input is a selection of an object in said first portion of the program related to said OCH.

[0446-0448]-user selects (user input) device icon and / or program icon and views the block diagram of the graphical program, using various debugging tools such as break points (selection of an object), single stepping and execution highlighting.

Per claim 13:

-wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy, and the second instructions are operable for adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

See rejection of claim limitations as addressed in claim 4 above.

Per claim 14:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first group.

See rejection of claim limitations as addressed in claim 5 above.

Art Unit: 2191

Per claim 15:

-wherein the presentation instructions are operable for opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

See rejection of claim limitations as addressed in claim 6 above.

Per claim 16:

A program product in a signal bearing medium executable by a device for presenting a hierarchical representation of a target program, the product comprising: first instructions for determining a program hierarchy for the target program based on an output of said product, wherein the program hierarchy comprises a combination of an object containment hierarchy and a temporal flow hierarchy of the target program; and presentation instructions for operably presenting at least a portion of the program hierarchy in response to a user input.

See rejection of claim limitations as addressed in claim 1 above.

Per claim 17:

-wherein the first instructions comprise second instructions for determining the OCH for a first portion of the program and further instructions for annotating the OCH with information from the TFH to form an annotated OCH for said presentation instructions to operably present.

See rejection of claim limitations as addressed in claim 1 above.

Art Unit: 2191

Per claim 18:

-further comprising a program understanding tool operable for performing the first instructions based on operational data of the program.

See rejection of claim limitations as addressed in claim 10 above.

Per claim 19:

-wherein said tool is a static analysis tool, the program product further comprising instructions for displaying a portion of the OCH in response to a selection of a program structure, and the presentation instructions being operably responsive to said user input wherein the user input is a selection of an object in said first portion of the program related to said OCH.

See rejection of claim limitations as addressed in claims 11 & 12 above.

Per claim 20:

-wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy, and the second instructions are operable for adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

See rejection of claim limitations as addressed in claim 13 above.

Per claim 21:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first

Art Unit: 2191

group.

See rejection of claim limitations as addressed in claim 14 above.

Per claim 22:

-wherein the presentation instructions are operable for opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

See rejection of claim limitations as addressed in claim 15 above.

Per claim 23:

-wherein said tool is one of a group of profiler, debugger, and quality analyzer, and the second instructions are further operable for determining the TFH for the first portion of the program.

See rejection of claim limitations as addressed in claim 11 above.

Per claim 24:

A program analysis apparatus, operable for determining and presenting a hierarchical representation of a target program, the apparatus comprising program analysis instructions and a processor and memory operably configured to run said instructions, said instructions comprising:
-first instructions for determining a program hierarchy for the target program based on an output of said product, wherein the program hierarchy comprises a combination of an object containment hierarchy and a temporal flow hierarchy of the target program;

Art Unit: 2191

-and further instructions for presenting at least a portion of the program hierarchy in response to a user input.

See rejection of claim limitations as addressed in claim 1 above.

Per claim 25:

-wherein the first instructions comprise second instructions for determining the OCH for a first portion of the program and third instructions for annotating the OCH with information from the TFH to form an annotated OCH for presenting as said portion of the program hierarchy, the first instructions being further part of a program analysis software tool operable for performing the first instructions based on operational data of the program.

See rejection of claim limitations as addressed in claims 1 & 2 above.

Per claim 26:

-wherein said tool is a profiler, the apparatus further comprising instructions for displaying a portion of the OCH in response to a selection of a program structure, and the presentation instructions being operably responsive to said user input wherein the user input is a selection of an object in said first portion of the program related to said OCH;

-and wherein the OCH comprises at least one of a first group of an object reference hierarchy and a data dependence hierarchy, and the further instructions are operable for adding temporal flow information from at least one of a second group of a control flow hierarchy, an invocation hierarchy, an allocation hierarchy, and an object creation hierarchy.

See rejection of claim limitations as addressed in claim 3 above.

Per claim 27:

-wherein the OCH comprises one of a textual, graphical and aural representation of the first group.

See rejection of claim limitations as addressed in claim 5 above.

Per claim 28:

-wherein the presentation instructions are operable for opening a scrollable window responsive to user action for displaying said portion of the annotated OCH, and displaying a related portion of source code of the program in a second window.

See rejection of claim limitations as addressed in claim 6 above.

Per claim 29:

-wherein said tool is one of a group of profiler, debugger, and quality analyzer, and the second instructions are further operable for determining the TFH for the first portion of the program.

See rejection of claim limitations as addressed in claim 3 above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The

Art Unit: 2191

examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached at (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned: 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman

01/04/2007

Mary Steelman
Primary Examiner